

Strand 3: Geometry (Concepts and Principles of Geometry)

Rationale

The study of geometry helps students represent and make sense of the world by discovering relationships and developing spatial sense.

Purpose of the Inventory

The purpose of the Geometry strand of this inventory is to assist teachers in evaluating a student's ability to recognize the basic characteristics, shapes, and properties of two- and three-dimensional geometric figures.

Inventory Administration

This inventory is to be administered to students individually by the classroom teacher. Teachers will complete the student checklist while administering the Inventory.

Manipulatives and Inventory Items

These manipulatives are included in the kit and will be used during administration of this inventory:

Unifix cubes	Dry-erase board, marker, and eraser	Attribute blocks	Geoboard and geobands	Geometric solids
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Manipulatives

- Attribute blocks

The teacher places the following attribute blocks in front of the student: one large triangle, one large square, one large rectangle, and one large circle.

As the teacher touches each shape, the teacher says,

What is the name of this shape?

(Answer: a. triangle b. square c. rectangle d. circle)

Kindergarten Standard 261.01: Apply concepts of size, shape, and spatial relationships.

a. Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.

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Manipulatives

- Unifix cube

Teacher puts his/her hand palm up in front of the student and provides the student with one Unifix cube. Have the student use the Unifix cube to demonstrate these positional words.

The teacher says,

1. Hold the cube under my hand.
2. Hold the cube above or over my hand.
3. Hold the cube beside my hand.
4. Hold the cube in my hand.
5. Hold the cube on your head.

(Answer: Student places cube in correct location.)

Kindergarten Standard 261.01: Apply concepts of size, shape, and spatial relationships.

d. Understand and apply appropriate vocabulary for position and size.

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Manipulatives

- Geometric solids – cone cube, and cylinder

The teacher places a cone, a cube, and a cylinder on the student page.

Teacher says,

1. Point to the cone.
2. Point to the cube.

(Answer: Student points to the geometric solids correctly.)

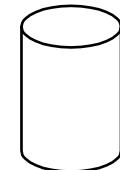
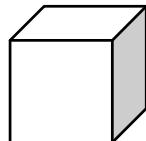
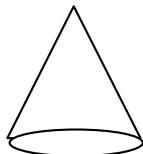
Kindergarten Standard 261.01: Apply concepts of size, shape, and spatial relationships.

- a. Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.

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Manipulatives
• Geometric
solids

The teacher displays one sphere, one cone, one cube, and one cylinder.



Teacher says,

1. Point to the sphere.

(Answers: Student points to sphere.)

2. Point to the cylinder.

(Answers: Student points to cylinder.)

1st Grade Standard 271.01: Apply concepts of size, shape, and spatial relationships.

- a. Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.
- d. Understand appropriate vocabulary.

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Manipulatives

- Geoboards
- Geobands

The teacher will give the student a geoboard and geoband.

Teacher says,

Use the geoboard to:

1. Make a shape that has 4 sides.

(Answers: Accept reasonable answers.)

2. Make a shape that has 3 sides.

(Answers: Accept reasonable answers.)

1st Grade Standard 271.01: Apply concepts of size, shape, and spatial relationships.

a. Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.

1st Grade Standard 268.03: Apply appropriate technology and models to find solutions to problems.

a. Select appropriate models to represent mathematical ideas.

M

L

P

M L P

Teacher says,

Point to the letter that shows symmetry.

(Answer: Student points to M.)

Manipulatives

- None

1st Grade Standard 271.01: Apply concepts of size, shape, and spatial relationships.
b. Recognize and create shapes that have symmetry.
d. Understand appropriate vocabulary.

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Manipulatives

- Dry-erase board
- Dry-erase marker

Teacher will give student a dry-erase board and marker.

Teacher says,

Draw a triangle.

(Answer: Example - )

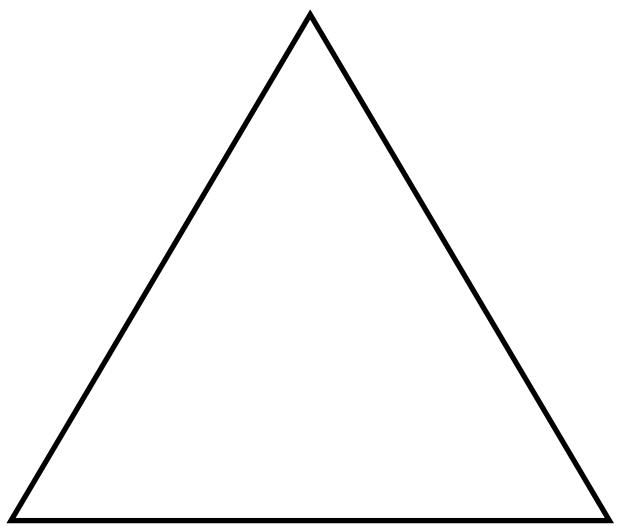
Draw a circle.

(Answer: Example - )

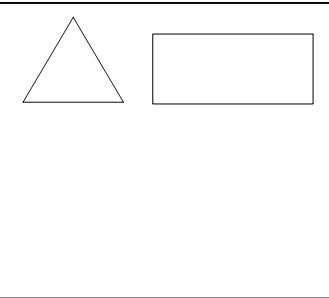
Draw a rectangle.

(Answer: Example - ) Remember a square is type of rectangle.

1st Grade Standard 271.01: Apply concepts of size, shape, and spatial relationships.
a. Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.



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Teacher says,

1. Tell me how these two shapes are different.

(Answer: Accept reasonable response. Example: The triangle has three sides/edges, but the rectangle has 4.)

2. Tell me how are these two shapes alike.

(Answer: Accept reasonable response. Example: They both have straight sides/edges. They both have corners/angles.)

Manipulatives

- None

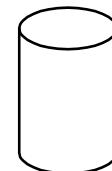
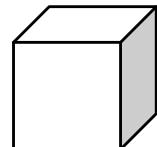
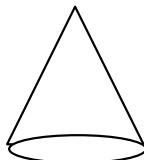
2nd Grade Standard 281.01: Apply concepts of size, shape, and spatial relationships.
a. Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.
d. Understand appropriate vocabulary.

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Manipulatives

- Geometric solids

The teacher displays one sphere, one cone, one cube, and one cylinder.



Teacher touches each shape.

Teacher says,

What is the name of this solid shape?

Tell me something that has this shape?

- (Answer: a. cone: eg. ice cream cone, tree, birthday hat.
b. cube: eg. dice, Unifix cube, box.
c. cylinder: eg., can, paper towels, pencils.
d. sphere: eg. ball, orange, globe.)

2nd Grade Standard 281.01: Apply concepts of size, shape, and spatial relationships.

- a. Recognize, name, build, draw, compare, and sort two- and three-dimensional shapes.
- d. Understand appropriate vocabulary.

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Manipulatives

- Attribute Block - hexagon
- Dry-erase board
- Dry-erase marker

The teacher places an attribute block hexagon and a dry-erase board and marker in front of student.

Teacher says,

Put this hexagon on the dry-erase board and trace around it. (Pause to allow student time to trace shape.) Draw a line of symmetry on the shape you drew.

(Answer: Student draws a line of symmetry.)

2nd Grade Standard 281.01: Apply concepts of size, shape, and spatial relationships.
b. Recognize and create shapes that have symmetry.
d. Understand appropriate vocabulary.

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Manipulatives

- Geoboard
- Geobands

The teacher places geoboard and geobands (rubber bands) in front of student.

Teacher says,

Using the geoboard and geobands make 3 different four-sided figures.

(Answer: 3 figures is correct, less than 3 is incorrect.)

2nd Grade Standard 278.03: Apply appropriate technology and models to find solutions to problems.

- a. Select appropriate models to represent mathematical ideas.

